

ON THE GENUS *PHRYNOTETTIX* Glover (*HALDEMANELLA* Auct.)

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The genus *Phrynotettix* was erected in 1872, on the figure of a specimen from the Pecos river, Texas, in Glover's *Illustrations of North American Entomology, Orthoptera* (Pl. VI, fig. 25), and has been entirely disregarded since, nearly all authors giving preference to Saussure's later name *Haldmanella*. The original figure of *Phrynotettix* is clearly recognizable, and the absence of a description should not militate against the adoption of it under such conditions. Four nominal species have been described, but a study of the descriptions proves that all are synonymous, while one quite distinct form from northern New Mexico appears to be undescribed.

*PHRYNOTETTIX* Glover.

*Ephippigera* Haldeman (not *Ephippiger* Latreille = *Ephippigera* Burmeister), Stansbury's Exped. to the Great Salt Lake, p. 371, 1852.

*Phrynotettix* Glover, Illustr. N. Amer. Entom., Orth., Pl. VI, fig. 25, 1872.

*Eremobia* Thomas (not of Serville), Rept. U. S. Geogr. Surv. West 100th Merid., V, p. 886, 1875.

*Haldmanella* Saussure, Addit. Prodr. *Edipodiorum*, p. 153, 1888.

*Haldmanella* Bruner, Proc. U. S. Nat. Mus., XII, p. 81, 1890.

*Haldemannia* Townsend, Insect Life, VI, p. 31, 1893.

Type.—*Phrynotettix verruculatus* Glover = *Ephippigera tshivavensis* Haldeman.

*Key to Species (based on females).*

- a.—Pronotum of female elongate-ovate, frontal costa not markedly constricted dorsad and not separated from fastigium by a definite transverse carina, *tshivavensis* (Haldeman).
- aa.—Pronotum of female cordiform, frontal costa considerably constricted dorsad and separated from fastigium by a single low callous carina, . . . . . *taosonius* n. sp.

**Phrynotettix tshivavensis** (Haldeman).

- Ephippigera tshivavensis*<sup>1</sup> Haldeman, Stansbury's Exped. to the Great Salt Lake, p. 371, Pl. X, fig. 3, 1852. (Chihuahua.)  
*Ephippigera tshivavensis* Walker, Cat. Derm. Salt. Brit. Mus., III, p. 545, 1870. (Utah.)  
*Phrynotettix verruculata* Glover, Illust. N. Amer. Entom., Orth., Pl. VI, fig. 25, 1872. (Pecos River, Texas.)  
*Eremobia magna* Thomas, Rept. U. S. Geogr. Surv. West 100th Merid., V, p. 886, Pl. XLIII, fig. 5, 1875. (Lower Arizona.)  
*H[aldmanella] tshivavensis* Saussure, Addit. Prodr. CEdipodiorum, p. 153, 1888.  
*Haldemanella robusta* Bruner, Proc. U. S. Nat. Mus., XII, p. 81, 1890. (Southern Arizona.)  
*Haldemannia tshivavensis* Townsend, Insect Life, VI, p. 31, 1893. (Las Cruces, New Mexico.)  
[*Haldemanella*] *tshivavensis* Scudder, Catal. Descr. Orthopt. U. S. and Can., p. 44, 1900.  
*Haldemanella verruculata* Scudder and Cockerell, Proc. Davenport Acad. Sci., IX, p. 39, 1902. (Organ Mountains, New Mexico.)

*Distribution.* — Previously recorded from Chihuahua, Pecos river, Tex.; lower and southern Arizona, La Cueva, Organ mountains, and Las Cruces in New Mexico, besides a record published by Riley of one immature specimen from the Argus mountains, Inyo county, Cal., the latter specimen being now before me. The record from Utah, given by Walker and generally followed, is no doubt erroneous. Walker had no material himself, and the original specimen described by Haldeman came from Chihuahua. The locality Utah was probably assumed from the title of the work in which Haldeman published.

The series examined includes the following localities: El Paso, Tex., March 31, 1902, and Alamogordo, Otero county, N. M., May 13, 1902 (Viereck and Rehn); Lake Valley, Sierra county, N. M. (Cope); Shovel Mount, Burnet county, Tex., July 31, 1901 (F. G. Schaupp).

*Synonymy.*—An examination of the published figures and descriptions of the forms which I have included under this species will show that they are identical, the slight differences which are apparent being mainly in the figures, and can be accounted for by the fact that several of them lack a considerable portion of the detail of the insect. The original figure by Haldeman is very good, in fact the best published, and Bruner's types of *robusta*

<sup>1</sup> In the original form of the species Haldeman introduced in the first syllable the Hebrew letter *resh*, to give the proper sound to the Latinized name. Walker translated it *sch*, but *sh* is sufficient.

(two of which I have examined) exactly fit it except for one trifling character, which the series examined shows to be a very variable one, namely, the obtuse-angulate or rotundate character of the caudal angle of the lateral lobes of the pronotum. Coloration appears to bear absolutely no weight as a diagnostic character, and is only of interest in that the males are deeper and more richly colored than the females.

Some measurements of the pronotum, in comparison with that of the new species, may be of interest:

Females.	Length.	Greatest Width.
<i>P. tshivavensis</i> :		
Chihuahua (from Haldeman), . . .	14 mm.	9 mm.
Lower Arizona (from Thomas), . .	18.7 "	12.5 "
Southern Arizona (from Bruner), . .	22 "	15 "
Lake Valley, N. M., . . . . .	20.5 "	13 "
Alamogordo, N. M., . . . . .	23 "	15 "
<i>P. taosanus</i> :		
Taos Valley, N. M. (type), . . .	17 "	12.5 "

***Phrynotettix taosanus* n. sp.**

*Type*.—♀; Taos Valley, Taos county, N. M., June, 1883. Collection of the U. S. National Museum.

The most important differential characters are given in the key of the species. The median carina of the metazona is also very apparent, while in *tshivavensis* it is obsolete;<sup>2</sup> the transverse sulci are also more arcuate in *taosana*, and the central portion of the caudal region of the prozona more tuberculate.

Body short and broad. Head with the vertex about equally long as broad (decidedly broader than long in females of *tshivavensis*), median carina distinct and extending to the tip of the fastigium; frontal costa compressed above and separated from the fastigium by a distinct rugose carina, below the ocellus strongly compressed and obsolete, sulcate throughout; eyes rather small, very much shorter than the infraocular genæ. Pronotum rather short, broad and cordiform in outline, the surface heavily rugose as characteristic of the genus, cephalic border subarcuate, the lateral carina strongly constricted cephalad, the caudal margins straight; median carina distinct but most developed on the meta-

<sup>2</sup> In immature specimens this carina is very distinct, but the type of *taosana* is a fully adult female, and the presence of a distinct median carina cannot be laid to immaturity.

zona, the central region of the prozona heavily tuberculate, the posterior portion strongly developed; transverse sulci arcuate, particularly the second and third; lateral lobes with the ventro-caudal angle obtuse-angulate, the central portion of the lobe bearing a considerable depression which extends caudad and dorsad from the ventro-cephalic angle. Tegmina not exceeding the tip of the pronotum in length, the reticulations very close (in *tshivaensis* these are much coarser and the principal veins are more apparent). Abdomen not exceeding the hind femora in length, the dorsal aspect keeled.

General color reddish-brown, the external faces of the femora marked with ochraceous.

*Measurements.*

Total length, . . . . .	34.5 mm.
Length of pronotum, . . . . .	17 "
Greatest width of pronotum, . . . . .	12.5 "
Visible length of tegmina, . . . . .	7.5 "
Length of hind femora, . . . . .	13 "

*Specimens Examined.*—One, the type.